Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of:	)	
	)	
Implementation of Section 304 of the Telecommunications Act of 1996	)	CS Docket No. 97-80
	)	
	)	
Commercial Availability of Navigation Devices	)	
	)	
Compatibility Between Cable Systems and Consumer Electronics Equipment	)	PP Docket No. 00-67
	)	

REPLY COMMENTS OF THE NATIONAL CABLE & TELECOMMUNICATIONS ASSOCIATION

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SUMMARY

The MSO-CE manufacturers Agreement on cable compatibility is in the public interest and warrants prompt Commission adoption of the proposed rules submitted by the Parties for FCC action. In initial comments, NCTA showed that the Agreement provides a host of consumer benefits: it will ensure that the next generation of digital television sets will receive one-way cable services without the need for set-top converter boxes; enable consumers with HDTV sets to receive HDTV signals with full image quality and easily record digital content; allow for an array of new devices easily to be connected to the new HDTV sets; permit access to cable's two-way services through digital connectors on high-definition digital TV sets; encourage manufacturers to speed the production of new sets and services for delivery to the market; and ensure that digital cable services will remain easy to access and use by consumers.

NCTA also showed that the Agreement encourages the development and distribution of high-quality digital content. A key element of the Agreement relates to secure digital interfaces that protect consumers' home recording capability along with copyright owners' rights to secure their digital content. Moreover, the Agreement establishes "rules of the road" on home recording capabilities and proposes copy protection rules for digital content based on existing law and studio-CE agreements and which are applicable to all multichannel video programming distributors.

As for the one major issue put out for comment that was not addressed in the Agreement -- down-resolution of high value digital content delivered over component analog outputs – NCTA explained that the cable industry's primary interest is that any method used to close the "analog hole" should not put cable operators at a competitive disadvantage vis-a-vis DBS and that any rule should result in as much high value content being made available to *all* MVPDs –

and thus to their customers – as is possible, consistent with the legitimate concerns of content providers.

Many commenting parties have recognized how groundbreaking the December 2002 MSO-CE Agreement is and support, to some extent or another, various provisions in the Agreement. From a variety of quarters, the proposal has been commended for promoting competitive neutrality, adopting modern standards of robustness, limiting the number of required features, and including other provisions serving the public interest.

Nevertheless, any agreement of this magnitude and complexity is bound to generate some misunderstandings, and this one is no exception. NCTA addresses those misunderstandings in these Reply Comments. Likewise, such an agreement inevitably attracts criticism for covering too much, or too little, or having not handled discrete issues in precisely the manner in which another party would have preferred. Again, the comments prove that this Agreement is no exception. These Reply Comments demonstrate that the Agreement reasonably addresses the legitimate concerns of the commenters.

In particular, we show that both by its terms, and in light of the context in which it was developed, the Agreement serves the public interest as it shows that parties who have been long-time adversaries can reach agreement based on consensus and compromise. And, contrary to the claims of those who argue that they did not have a seat at the negotiating table, this proceeding provides all interested parties with an opportunity to be heard and the Agreement fosters – rather than constrains – innovation and competition.

The proposed encoding rules were included in the Agreement to resolve years of deadlock and to increase programming available to consumers. They assure that neither cable nor DBS customers will be disadvantaged as long as the rules apply to all MVPDs. The

proposed rules are modeled on those already developed for secure digital connectors, and agreed to by MPAA studios and others, so the objections of MPAA and others to the rules should be dismissed. In this regard, the numerous suggested changes to the encoding rules are unnecessary. Specifically, in response to claims of same, we demonstrate herein that (1) the Agreement cannot discard all copy protection within the home; (2) there is no need to change the treatment of SVOD; (3) the process for adjusting encoding rules going forward adopts proper standards and procedures; (4) Copy "one generation" should not permit an infinite number of portable copies; (5) the PVR "pause" features protect PVR functionality without undermining "copy never" protection; (5) HD carriage is not sufficient in and of itself to alleviate the concerns behind the encoding rules. Finally, the Commission has jurisdiction to impose encoding rules on all MVPDs, deriving its authority from Sections 629, 624A and 336 of the Communications Act.

The Agreement's certification requirements are reasonable and accommodate manufacturers' needs. The DFAST license agreement – a commercial intellectual property license for which FCC adoption is neither sought nor warranted – will be available when the rest of the regulatory regime is put in place. For this reason, technical edits to the DFAST agreement should be directed to private negotiation. The DFAST agreement remedies are supplemental to other available legal remedies, and need not be changed and, contrary to some contentions, its provisions already provide for non-discriminatory treatment.

The DFAST agreement's Compliance and Robustness rules address all legitimate concerns raised by commenters. In this regard, they do not preclude a POD-equipped PC with a cable modem, and the Agreement is reasonable in requiring PCs to resist tampering and unauthorized copying. The agreement's watermarking language merely prescribes non-interference when and if a consensus watermark is created.

The Agreement's digital connector requirements are also in the public interest. The Agreement does not lock in current digital connectors and there are multiple paths to prove the security of new connectors (including USB connectors). There is ample right and opportunity to participate in the evaluation of new connectors and the Agreement provides for competing home domains.

Finally, concerns raised by TiVo (regarding POD deployment), the NAB (regarding broadcast tuner, PSIP, and related issues), Music Publishers (regarding treatment of music under the Agreement), Public Knowledge and EFF (regarding consumer education), ACA (regarding costs to small cable operators), and others are all addressed herein where we provide clarification of misunderstandings where appropriate, and rebuttal where necessary.

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REPLY COMMENTS OF THE NATIONAL CABLE & TELECOMMUNICATIONS ASSOCIATION

The National Cable & Telecommunications Association ("NCTA") hereby submits its Reply Comments in the above-captioned proceeding. In these Reply Comments, NCTA addresses comments filed in response to the Commission's Notice of Proposed Rulemaking ("Notice") seeking comment on provisions of the December 2002, Agreement ("MSO-CE Agreement" or "Agreement") on cable-consumer electronics compatibility reached by cable operators and consumer electronics ("CE") manufacturers (collectively "Parties" or "Signatories").

These Reply Comments demonstrate that concerns raised about the Agreement arise either from misunderstandings about the terms of the Agreement or misplaced legal or policy positions. In these Reply Comments, NCTA provides clarification for those who have misunderstood the Agreement and rebuttal to those who urge the Commission to reject its terms. As a result, the Commission should expeditiously adopt the rules proposed by the Agreement's Signatories, triggering implementation of the entire Agreement by the Parties and providing a spur to the digital transition.

I. INTRODUCTION

A. By Its Terms, the Agreement Serves the Public Interest

In NCTA's initial comments, we demonstrated why the Agreement is in the public interest and warrants prompt Commission adoption of the rules submitted by the Parties for FCC action. NCTA showed that the Agreement provides a host of consumer benefits: it will ensure that the next generation of digital television sets will receive one-way cable services without the need for set-top converter boxes; enable consumers with HDTV sets to receive HDTV signals with full image quality and easily record digital content; allow for an array of new devices easily to be connected to the new HDTV sets; permit access to cable's two-way services through digital connectors on high-definition digital TV sets; encourage manufacturers to speed the production of new sets and services for delivery to the market; and ensure that digital cable services will remain easy to access and use by consumers.

NCTA also showed that the Agreement encourages the development and distribution of high-quality digital content. A key element of the Agreement relates to secure digital interfaces that protect consumers' home recording capability along with copyright owners' rights to secure their digital content. Moreover, the Agreement establishes "rules of the road" on home recording capabilities and proposes copy protection rules for digital content based on existing law and studio-CE agreements and which are applicable to all multichannel video programming distributors.

Finally, NCTA demonstrated that the Agreement creates a path for rapid development of the next generation of digital TV products and relieves CE manufacturers of their concerns about delay in the process. It creates a strong presence for cable operators at consumer electronics retailers like Circuit City and Best Buy, spurring competition with DBS at the point of sale, which can only benefit consumers. It standardizes and streamlines technology that

enables devices to interoperate and allows those devices to be used by consumers on digital cable systems throughout the country.

As for the one major issue put out for comment that was not addressed in the Agreement -- down-resolution of high value digital content delivered over component analog outputs – NCTA explained that the cable industry's primary interest is that any method used to close the "analog hole" should not put cable operators at a competitive disadvantage vis-a-vis DBS and that any rule should result in as much high value content being made available to *all* MVPDs – and thus to their customers – as is possible, consistent with the legitimate concerns of content providers.

As for parity, NCTA explained that the Parties have requested that the FCC apply its encoding rules (copy protection limits) – including whatever down-resolution rules it may adopt – to *all* MVPDs. As for the merits of down-resolution, NCTA said the critical question is whether the consumer will have more – or fewer – choices of high value digital content should down-resolution be prohibited, mandated or permitted. NCTA concluded that if the FCC determines, as a number of content providers suggest, that permitting down-resolution of high value digital content delivered over analog outputs is the only means of assuring that content will be made available to consumers, then the FCC should adopt rules achieving that result.

Many commenting parties have recognized how groundbreaking the December 2002 MSO-CE Agreement is and support, to some extent or another, various provisions in the Agreement. From a variety of quarters, the proposal has been commended for promoting competitive neutrality, adopting modern standards of robustness, limiting the number of required features, and including other provisions serving the public interest.[1]

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[1] *See* Comments of the Motion Picture Association of America, Inc. ("MPAA") at 4, 5 (supporting DVI/HDMI and 1394/5C protected digital connectors; licensing process for POD-Host interface; and content protection

Nevertheless, any agreement of this magnitude and complexity is bound to generate some misunderstandings, and this one is no exception. NCTA will address those misunderstandings in these Reply Comments. Likewise, such an agreement inevitably attracts criticism for covering too much, or too little, or having not handled discrete issues in precisely the manner in which another party would have preferred. Again, the comments prove that this Agreement is no exception. These Reply Comments will demonstrate that the Agreement reasonably addresses the legitimate concerns of the commenters.

B. The Context in Which This Agreement Was Adopted Demonstrates Why it Serves the Public Interest

Perhaps most significant to issues in these long-running dockets in particular, and to issues surrounding the digital transition in general, this Agreement demonstrates the ability of parties with often adverse positions to come to the Commission with an agreement based on compromise and consensus. Consumer electronics manufacturers who have strongly resisted FCC jurisdiction over their receivers, and cable operators who have generally favored marketplace solutions over regulation, have agreed to submit their TV sets and their cable plant to FCC regulation. They make this proposal so that consumers will enjoy the results which will flow from innovation and competition among multiple suppliers of portable, interoperable digital television receivers and similar devices, and so that the manufacturers of those devices

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tools); Comments of National Association of Broadcasters and the Association for Maximum Service Television, Inc. ("NAB") at 2, 11 (supporting agreement between CE and cable industries regarding technical specifications for "cable-ready" DTVs); Comments of ATI Technologies, Inc., Dell Computer Corporation, Hewlett-Packard Company, Intel Corporation, Microsoft Corporation and NEC Corporation ("PC Interests") at 2, 9 (supporting approval of the MOU and associated documents as "critical first step" in development of competitive markets; supporting process for introducing new content protection technologies); Joint Comments of the National Music Publishers' Association, The American Society of Composers, Authors and Publishers, The Songwriters Guild of America and Broadcast Music, Inc. ("Music Publishers") at 13, 19 (providing support for potential watermark as protection; support for digital piracy protection; support for critical testing process; support for copy protection mirroring existing federal law); Public Knowledge and Consumers Union ("Public Knowledge") at 2 (supporting framework for "plug-and-play" compatibility); Comments of DirecTV, Inc. ('DirecTV") at 10 (indicating support for technical requirements for "cable ready" devices and labeling

will include the security and copy-protection tools needed to induce program suppliers to release high-value digital programming to cable customers.

Until the MSO-CE Agreement was reached, the MSO and CE Signatories were locked in intense disagreement over these issues as reflected in years of FCC comments; at FCC "Hoe-Downs"; in a parade of *ex parte* submissions in these FCC Dockets; at multi-party meetings colloquially known as the "Tauzin Roundtables" on Capitol Hill; in standards bodies; in speeches and on trade panels. CableLabs, the cable industry's research and development consortium, sought to require consumer electronics manufacturers to manufacture cable-compatible set-top boxes and TVs with the copy protection tools that manufacturers had built into DBS boxes and had agreed to in the 5C license agreement.[2] These "PHILA"[3] rules were criticized as potentially disenfranchising early adopters.

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regulations for DTV products) and Comments of the Home Recording Rights Coalition ("HRRC") (support for encoding rules and copy protection tools).

[2] Early efforts by CE manufacturers to offer TV sets displaying high quality video images (such as from DVD players) led to widespread distribution of TV sets with "component analog" plugs – three plugs of different colors that connect a DVD player or high-definition set-top box to a television. The CE industry later standardized around a physical plug for digital recording devices called "1394." The 1394 interface could, for example, connect a set-top box to a digital VCR and deliver a digital copy. To respond to Hollywood studios' concern over digital copying, five manufacturers (Sony Corporation, Matsushita Electric Industrial Co., Ltd., Intel Corporation, Toshiba Corporation and Hitachi, Ltd.) created an encryption technology known as Digital Transmission Content Protection ("DTCP") for use with the IEEE 1394 digital port. The set of license agreements implementing DTCP is known colloquially as "5C" for these five companies. "5C" embraces three key documents: (1) An "Adopters License" – the license between the DTLA (the 5C licensing authority) and manufacturers, which allows manufacturers to incorporate the DTCP technology into their hardware; (2) A "Content Participant Agreement" – the agreement between the DTLA and content owners, to allow content owners to encode their content for use by DTCP technology; and (3) An "Intellectual Property Statement" that allows any programmer to send programming through a 1394/5C port so long as the programming is encoded consistent with the 5C rules. Violation, it is implied, is a patent violation. The 5C agreement covers both "source devices," such as a set-top box, which uses 5C copy protection to encrypt content, and "sink devices," such as a digital television set, which uses 5C copy protection for decrypting content. Makers of devices with 1394/5C outputs must make their source devices output programming through the 1394 port with the proper copy control signals that are embedded in programs – for example, copy never, copy once, copy no more, or copy freely. Sink devices must recognize and honor those codes. Manufacturers must also make the devices "robust" against hackers, so that there are no readily available jumpers or menus that allow users to defeat such copy controls.

[3] "PHILA" refers to the CableLabs'POD-Host Interface License Agreement, the current version of which is available at http://www.opencable.com/downloads/PHILA_031003.pdf.

In this time period, NCTA launched an industry-wide initiative to provide customers with the option of purchasing integrated digital cable set-tops at consumer electronics stores with an assurance of virtual "portability" through an operator "buy-back" program.[4] Though not intended as a substitute for set-top boxes with separated security that would be sold at retail, the initiative elicited no CE follow through, except for more regulatory filings. The cable industry also voluntarily developed the OpenCable Applications Platform ("OCAP") specification,[5] ahead of schedule, which enhances the portability of set-top boxes and digital television sets, by supporting the nation-wide portability of applications, such as program guides. Leading cable companies sent a series of letters confirming that cable operators' systems would support OpenCable-compliant devices (1999), would support CableLabs-certified, OCAP-enabled devices once such equipment becomes commercially available (2001), and would support integrated digital televisions that complied with the OpenCable specifications (2002). In the meantime, the "digital transition" lagged, and some pointed to the need for an integrated digital TV as one key to spur progress.

With this as background, the cable and consumer electronics had to start somewhere to solve this problem, and consequently started with the consumer electronics equipment that most people use to receive television programming: the TV and the set-top box. The Parties resisted the temptation to try to solve everything all at once, because that had proven a recipe for paralysis. Even with respect to the TV and the set-top box, the problem was broken into two parts. This December 2002 Agreement addresses the "one-way" reception of programming that

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[4] *See* http://www.ncta.com/press/press.cfm?PRid=188&showArticles=ok.

[5] More information on the OCAP specification can be found on the CableLabs web site at http://www.opencable.com/ocap.html.

does not require a bi-directional path to the cable operator's head-end.[6] The Parties are already underway with negotiations over part two – to address the bi-directional, interactive world. Reaching this point was a challenging undertaking: thousands of hours put in by the top technology executives at MSOs and CE manufacturers; negotiating sessions that included as many as 50 individuals at a time and nearly as many points of view; negotiating sessions that stretched through the night, repeatedly.

The Signatories recognize that this Agreement is a first step – but it is a significant one. Prompt FCC adoption of the proposed rules will validate the efforts put in by two formerly contending industries and foster further progress in ongoing industry discussions.

C. This Proceeding Provides All Interested Parties with an Opportunity to be Heard

Some parties complain that they have not been listened to, or will have no chance to be heard on the Agreement. For example, the National Association of Broadcasters ("NAB") claims that the parties neglected the broadcast tuner, and should have dealt with 8-VSB modulation instead of QAM that cable systems use.[7] SBCA states that it was not at the table, and could not voice its concerns – although it does not say what they are.[8] DirecTV raises a similar concern.[9] Intel, Microsoft and other PC interests complain that they were not at the table and that the Agreement has left some PC issues unresolved.[10] But, as discussed below, this FCC

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6 Memorandum of Understanding Among Cable MSOs and Consumer Electronics Manufacturers (December 12, 2002) ("MOU") § 1.4.

7 *See* NAB at 2.

8 *See* Comments of the Satellite Broadcasting and Communications Association ("SBCA") at 2.

9 *See* DirecTV at 3.

10 *See* Comments of Intel Corporation ("Intel") at 4; PC Interests at 4.

proceeding – open to comment from all sides – was always intended to be a forum to raise concerns about regulatory issues, just as it has become.

As to the concerns raised by DBS commenters in particular, this rulemaking gives DBS providers the opportunity to raise substantive issues. They have not done so, other than to ask that they be exempted from the proposed encoding rules. This request should be declined. Indeed, it is their very exemption from the separate security retail availability requirement and POD requirements that originally led to the need for parts of this agreement.[11]

Whereas, under the FCC's rules, cable operators must take into account their customers' use of set-top boxes and other devices provided by unaffiliated manufacturers and vendors and make certain such devices work on their systems, DBS providers have no such FCC-imposed obligation. Instead, current regulations permit DBS providers to specify exactly the features that must be built into their receivers by their self-selected manufacturers for retail sale through their self-selected distributors. Thus, they have been able to simply require that DBS receivers include copy control tools desired by program suppliers.

By contrast, CE manufacturers have resisted including such capabilities in the cable reception equipment they are permitted to build under the FCC's "commercial availability" mandate. The proposed rules level that field, yet have been crafted to assure a right to add features, experiment with trials and launch new models precisely to protect the ability for rapid innovation now enjoyed by DBS and their manufacturers. DBS providers offer no credible

[11] In order to allow for the manufacture and sale of retail set-top boxes without compromising scrambling protections, under FCC auspices the cable industry created specifications for separating the set-top box functions into a "host" device and the descrambling function into a Point-of-Deployment ("POD") module that plugs into the host. This is similar to how a PC card plugs into a laptop or a security device plugs into a DBS set-top box. The POD unlocks the proprietary scrambling of the secure programming coming from the cable network and passes it to the host. But allowing unscrambled programming to pass unprotected across that interface is an invitation to piracy. Thus, an encryption process, known as the Dynamic Feedback Arrangement Scrambling Technique ("DFAST"), is applied to the programming in the POD and then is used for decryption inside the host.

explanation of any problem the proposed rules would cause them, nor specific criticism of any aspect of the proposed rules, and no constructive ideas for change.

Intel has made some specific suggestions that NCTA responds to below – exactly as notice and comment should work. As for the larger issue raised by Intel and other PC interests – the claim that the PC has been disadvantaged[12] – the proposal specifically exempts Internet distribution platforms from the encoding rules,[13] providing Intel a head start in pursuing business models with different home recording options for content downloaded from the Internet.

While not all provisions of the MSO-CE Agreement require FCC action, those that do (*e.g.,* technical, labeling and encoding rules) are an integral part of the entire package agreed to by the MSO and CE Signatories. While Commission action is neither sought nor warranted on provisions not submitted for FCC adoption (such as the DFAST commercial IP license), parties have shown no reticence to comment on them as well as on the proposed rules submitted by the parties. As a result, this FCC rulemaking provides the appropriate forum for all voices to be heard on all of these issues. Any interested party has been given opportunity to offer comment, and to respond to all comments. Indeed, the Commission provided a more than ample comment (60 days) and reply comment (30 day) cycle, particularly in light of the fact that the Agreement and the provisions for which FCC adoption is sought have been publicly available since December 2002.

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[12] *See* Intel at 3-4.

[13] Encoding Rules as proposed to the FCC ("Encoding Rules") § 76.1901(b).

D. The Agreement Does Not Constrain Innovation

Some commenters portray the Agreement as a constraint on innovation and competition.[14] However, if there was one guiding principle in the development of the Agreement, it was that it would not serve as a constraint on innovation.

The Agreement does not preclude competitive platforms.[15] There is nothing in the MOU or the proposed rules that restricts the dissemination of content across any competing platform. The proposal is premised on the existence – and further development – of facilities-based competitive platforms. Moreover, it preserves considerable room for technological differentiation.[16] For example, there is broad design freedom in unidirectional digital devices, without any "Host Profiles" to constrain them.

In addition, the proposal preserves considerable room for negotiation of copy controls.[17] For example, the proposed rules *permit but do not require* Video On Demand ("VOD") programming to be marked "copy never." Traditional bilateral market negotiations between program suppliers and MVPDs will define whether the program will be marked, and if so with what control. The encoding rules merely set boundaries. VOD could be offered with no copy controls, and for a penny, if the program supplier and the distributor so agreed.

The rules minimize the number of normative requirements – that is, they do not impose more mandates than are required. That is why, for example, they do not require all devices to have 1394 ports, as NAB now requests. That choice is left to the market, so that customer demand can determine the prevalence of 1394 as a connector.

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[14] *See, e.g.,* SBCA at 4; MPAA at 4.

[15] *See infra*, § V.A.

[16] *See infra* §§ V.A., VI.A. and MOU § 3.11.

[17] *See infra* § II.E.

The rules do not impose business models. SBCA claims, without detail, that the encoding rules "impose" business models about which the parties will be unlikely to agree.[18] DirecTV raises a similar concern.[19] The proposed rules do no such thing. They describe every form of television offering available today, including free-over the air; the variety of basic, tiered, premium, and on-demand programming available on cable and satellite; and even programming "paused" on PVRs.[20] Then they provide for the automatic right to launch experiments with any existing or new model,[21] and the right to permanently launch new models without any advance regulatory filing or approval[22] – to assure that there is not the "advanced preview" to competing MVPDs that SBCA and DirecTV worry about.[23] The only "rules" are those applied today, outside of bona fide trials, and those rules start with the same 5C rules that apply to the 1394 boxes DBS already has.[24] Neither SBCA nor DirecTV offers any evidence that anything DBS offers today – or wants to offer – cannot fit into this framework.

These provisions of the proposed encoding rules insure that they will serve their purpose yet not stifle innovation. In fact, every part of the rules and MOU has been structured to encourage innovation. The encoding rules provide room for marketplace negotiation, experimentation, and launch of new business models.[25] The DFAST license agreement creates a wide berth for unidirectional digital devices to add features and functionalities. Multiple paths

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[18] SBCA at 3 and 5.

[19] DirecTV at 8.

[20] Encoding Rules §§ 76.1902, 76.1903(2)(b).

[21] Encoding Rules § 76.1903(4).

[22] Encoding Rules § 76.1903(3).

[23] *See* SBCA at 5-6; DirecTV at 9.

[24] *Compare* Encoding Rules § 1903(2) *with* Content Participant Agreement: Audiovisual Version (July 10, 2001) available at http://www.dtcp.com/data/DTCP_Content_Participant010730.pdf ("5C Content Agreement") § 5.1.

[25] Encoding Rules §§ 76.1903(3), (4).

are opened for innovation in digital connectors and security techniques.[26] Specific provision is made to permit innovative techniques for secure home domains, within which consumers may enjoy programming on multiple, interconnected home devices.[27] Certification is streamlined to speed these unidirectional products to market.[28] All are described in detail below.

* * *

In sum, the Agreement in general, and the proposed FCC rules in particular, will serve the public interest in a variety of ways, will not constrain innovation or competition, and will spur the digital transition, resolving long-deadlocked issues and providing a path for progress on other issues. All interested parties have had an opportunity to be heard on these issues and we address their specific concerns in the remainder of these Reply Comments. Finding nothing significant in those concerns, we urge the Commission to adopt the rules proposed by cable MSOs and CE manufacturers in their December 2002 Agreement.

II. ENCODING RULES

A. Why Encoding Rules Were Included in the Agreement

A key to obtaining CE's agreement to manufacture cable-ready devices that read and respect copy protection signals was an assurance that such signals would not be used to nullify home copying. Those assurances are the "encoding rules" that apply differing levels of permissible copy controls to different kinds of programs;[29] that assure that programming will not

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[26] DFAST Technology License Agreement for Unidirectional Digital Cable Products ("DFAST agreement"), Exhibit B – Compliance Rules ("Compliance Rules") § 2.4.4.

[27] Encoding Rules § 76.1903(5)(a).

[28] MOU §§ 2.8, 3.7.

[29] Encoding Rules §§ 76.1903(2), (3).

be switched off through selectable output control;[30] and that restrict "down-resing" of free over-the-air HD broadcasts.[31]

MPAA challenges the need for these encoding rules,[32] and the DBS industry requests an exemption.[33] Their combined comments, however, validate the need for the FCC to adopt encoding rules applicable to all MVPDs.

It was the presence of such copy protection tools in DBS boxes that stymied the cooperation between cable operators and CE manufacturers in attempts to implement the FCC's commercial availability requirements. Studios threatened to restrict the supply of products to cable if cable did not adopt similar protections across the POD-Host interface. Even now, MPAA's comments demonstrate the studios' desire for selectable output control and their continuing insistence on down-resing. "Content owners," writes MPAA, "may wish to make certain early-release content available only through digital connections that enable particular content protection features, *rather than allow output of the content over all existing analog and digital outputs* and destroy or devalue downstream markets."[34]

That kind of warning led the cable industry to include the capability for encoding tools, selectable output control and down-res in PHILA, in order to match (and compete with) DBS proprietary boxes in the world of "compatible" retail devices. The inclusion of those tools led to demands from the consumer electronics industry that they be limited (through encoding rules) or

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30 Encoding Rules § 76.1903(1).

31 Encoding Rules § 76.1903(2)(a).

32 *See* MPAA at 3-5.

33 *See* SBCA at 5; DirecTV at 4-5, 10-11.

34 MPAA at 6. DirecTV makes a similar argument as to the purported benefits of having selectable output control capability in devices accessing MVPD services. DirecTV at 6-7. DirecTV also advocates retention of selectable output controls as a response to the compromise of certain protected outputs. *Id*. at 7. The MSO-CE Agreement addresses such a scenario by permitting certificate revocation that would affect the secured programming, rather than disabling the entire interface. *See* MOU § 2.1; DFAST agreement, § 8.2.

abandoned (as with selectable output controls). And that led to the marketplace and regulatory deadlock described earlier.

B. The Encoding Rules Assure that Neither Cable Nor DBS Customers Will Be Disadvantaged

The encoding rules provide a set of assurances that cable-compatible consumer electronics equipment will continue to receive programming through digital, standard analog, and component analog ports, and that home recording equipment will continue to have something to record consistent with the negotiated arrangements between program suppliers and MVPDs, bounded only by the encoding rule ceilings. Those ceilings say, for example, that free over the air broadcasting must not be coded to prohibit home copying;[35] but that on the other extreme, high value VOD programming may be so encoded.[36]

The proposed encoding rules assure parity among MVPDs with respect to copy protection requirements so that neither cable nor DBS customers would be disadvantaged if their providers could not assure content providers of their ability to protect high value content. These rules offer to surrender cable operators' use of selectable output controls, and to limit the use of copy protection tools, if DBS does so as well. In this manner, consumers will also come to enjoy consistent expectations in the use and operation of their consumer electronics devices.

MPAA and DirecTV would prefer a market in which different technologies with different levels of security and different copy protection rules could develop.[37] If that means – as DBS requests – that the proposed rules should not apply to all MVPDs, then the parties are back to square one. Cable customers would risk losing access to high value content because

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[35] Encoding Rules § 76.1903(2)(a).

[36] Encoding Rules § 76.1903(2)(b)(A)(1).

[37] *See* MPAA at 4, 7-8; DirecTV at 7.

cable operators could not assure content providers of their ability to protect high value content in the same manner as DBS.

C. The Encoding Rules Must Apply to All MVPDs

The encoding rules must apply to all MVPDs for this to work.[38] However, this is not, as MPAA suggests, sinking to the lowest common denominator, rather than raising the bar to the better PHILA model. Like MPAA, NCTA continues to believe that PHILA encourages and facilitates the digital transition. But we realize that there is also a significant public benefit in adopting the proposed regime, in which a new track, parallel to PHILA, can be used as an alternative for one-way products that will be built; but only if the use of copy protection tools is limited. Except for the unresolved analog hole issue, the security of this parallel regime is provided for and is widely recognized. But cable operators cannot follow this parallel path – in which they give up use of the tools available to both cable and DBS – unless all MVPDs do so, lest cable and cable customers be deprived of high value programming that will flow to DBS and other video distributors. For this reason, the call by DBS providers for exemption from the proposed rules must be rejected.[39]

D. The Proposed Rules are Modeled on Those Already Developed for Secure Digital Connectors, and Agreed to By MPAA Studios

MPAA argues that no such rules should be adopted, and further, that rules might nullify existing contracts, although they do not provide detail or support.[40] The proposed rules were drafted specifically to mirror encoding rules that have already been developed in the market and have already been endorsed by MPAA member studios.

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[38] Contrary to DirecTV's assumption, the core video businesses of *all* MVPDs subject to the FCC's jurisdiction (including cable and DBS) would be covered by the proposed encoding rules. The "exemption" for video delivered over DSL or cable modems services merely recognizes that the FCC may not have jurisdiction over such Internet-provided services; it was not an effort to disfavor satellite nor does it. *See* DirecTV at 5.

[39] *See* DirecTV at 4-5; 10-11; SBCA at 5.

The proposed encoding rules start with the same classifications and rules that are used in the "5C" encoding rules applied to the 1394 port. Those rules have been specifically adopted by two major studios to govern their relations with consumer electronics manufacturers, and the rules apparently are not opposed by the remaining studios. (The other studios' reluctance to sign onto the 5C rules does not appear to be based on encoding rules issues.) Thus, the rules are modeled on those that have already been developed in the market for secure digital connectors, and agreed to by MPAA studios. Adopting the proposed rules would enhance, not obstruct, studios' efforts to secure digital connectors for consumer electronics equipment.

E. Suggested Changes to the Encoding Rules are Unnecessary

In this section, we address the various comments and suggestions for specific changes to the proposed encoding rules

1. The Agreement cannot discard all copy protection within the home.

TiVo suggests that there is no reason to control copying within the home so long as redistribution outside the home is controlled.[41] That approach clearly does not satisfy program suppliers, who have already warned cable operators that the inability to control the copying of high-value early release movies will handicap cable's ability to obtain that product in the first place. TiVo may be advantaged in a world in which consumers only have access to older "on demand" movies, but cable operators have every right to try to obtain newer, more varied product for their customers. Some level of copy protection inside the home is essential for that purpose.

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[40] *See* MPAA at 10.

[41] *See* Comments of TiVo, Inc., ("TiVo") at 5–6.

2. There is no need to change the treatment of SVOD.

Starz disagrees with the rule (in both 5C and the proposed encoding rules) that allows subscription video-on-demand ("SVOD") to be copy protected as much as other video-on-demand offerings. Starz argues that subscription video-on-demand may be restricted no more than copy once, because the movies now populating Starz's SVOD channels are in the same release window as those now populating Starz's linear pay channels which are subject to a "copy once" ceiling.[42]

There is nothing in the proposed encoding rules or the Agreement that prevents Starz from negotiating a "copy once" arrangement with program suppliers for movies in such release windows. But the proposed rules, like 5C, also allow them and studios the additional flexibility to agree to "copy never" or "copy freely." Some program suppliers may believe that when consumers download a movie from VOD or SVOD, they do so at the moment they are ready to view it, and that in such transactional viewing, the consumer should no more expect to retain a permanent copy than she does after renting and returning a DVD. Alternatively, Starz may be negotiating an SVOD agreement for motion pictures in an earlier release window than it now has, in which case the "copy never" option may be needed. In another scenario, Starz may be negotiating for a series of evergreen movies for which a studio believes no copy protection is required. Starz and the studio may negotiate any appropriate terms, from copy freely to copy never. There is nothing in the proposed rules that interferes with such negotiations.[43]

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[42] *See* Comments of Starz Encore Group LLC, ("Starz") at 3.

[43] This example also illustrates how the proposed rules address TiVo's request that copy protection be negotiated in the marketplace. Under the rules, that is where such terms will be negotiated – subject only to the guarantees deemed necessary to bring recording equipment to market.

3. The process for adjusting encoding rules going forward adopts proper standards and procedures.

Intel and other PC interests ask that the "public interest" to be evaluated for encoding rule changes be "fleshed out."[44] But, the proposal already lists carefully selected criteria for that evaluation – the benefit to consumers of the service, including, but not limited to, the availability of content in earlier release windows, more favorable terms, the effect on innovation or original programming; the ways in which the service differs from current services offered by MVPDs; and the effect on reasonable and customary expectations of consumers with respect to home recording.[45]

Intel and other PC interests also ask that any individual may launch a proceeding at the FCC to resolve disputes over the encoding rules for new business models.[46] The proposed rule also accounts for such an approach. It provides all consumers and interested parties the right to participate in such an FCC process, but channels disputes first into commercial dispute resolution, and, only failing that, into a complaint process initiated by an MVPD or manufacturer of recording devices.[47]

Music interests suggest that the Copyright Office be a necessary party to such proceedings.[48] NCTA does not agree that such proceedings are resolving copyright issues, or even that they will necessarily turn on issues in which the Copyright Office has exclusive expertise. Where the Copyright Office has previously identified FCC proceedings in which it is interested, it has participated and it is free to do so in the future. The proposed rules would

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[44] *See* PC Interests at 8.

[45] Encoding Rules §§ 76.1903(2)(c)(iii), (3)(a)(3).

[46] *See* PC Interests at 7-8.

[47] Encoding Rules § 76.1903(3)(a)(2).

[48] *See* Music Publishers at 14.

permit the Copyright Office, along with any other interested person, to file comments on any proposal to change encoding rules within existing business models,[49] and would permit it, along with any other person, to file comments regarding complaints about new business models.[50]

While the proposed rules have been crafted to protect rapid innovation, some argue for changes that will constrain that innovation. One party suggests that every new offering needs to be first filed at the FCC.[51] In fact, the proposed rules allow launch of new models (with a press release)[52] to steer any disputes towards *private* resolution instead of opening an FCC docket with every new proposal. Another suggestion is that no change in business model or encoding rule should be permitted without notice-and-comment rulemaking.[53] The proposed rules allow for individual petitions (to permanently apply new encoding rules to existing models)[54] and individual cases (for after-the-fact disputes arising from initiation of a new business model)[55] to allow for individualized innovation and competition, rather than forcing all MVPDs to move in lockstep while inventing new ways of doing business.

This mechanism also provides a path for competing MVPDs to launch new business models without giving one another an "advanced preview" – a concern expressed by SBCA and DirecTV.[56] DirecTV also erroneously claims that certain of its current offerings, like NFL Sunday Ticket, would not fall within the definition of "Defined Business Model and would

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[49] Encoding Rules § 76.1903(2)(c)(2).

[50] Encoding Rules § 76.1903(3)(a)(2)(c).

[51] *See* PC Interests at 7.

[52] Encoding Rules § 76.1903(3)(a)(1).

[53] *See* PC Interests at 7-8.

[54] Encoding Rules § 76.1903(2)(c).

[55] Encoding Rules § 76.1903(3)(a)(2).

[56] *See* SBCA at 5-6; DirecTV at 9.

require DirecTV to petition the Commission *in order to provide these offerings*."[57] That is not correct. Only if and when copy control tools are embedded in such programming would the encoding rules apply, and, in any event, and there is nothing to suggest the named current offerings do not fall within the definition of a Defined Business Model.

PC interests suggest that the Commission eliminate or limit to six months any bona fide trial.[58] The "bona fide trial" is modeled on an existing provision of 5C,[59] and it protects the right to experiment, test, and develop new ways of doing business. Had the time been limited to six months, cable operators would have been unable to trial innovative services like IP telephony, which has been underway in test markets for well over six months. To assure that bona fide trials are not used to eviscerate the rules, the proposal specifically calls for the use of the FCC's Section 76.7 complaint process to challenge abuses.[60]

4. Copy "one generation" should not permit an infinite number of portable copies.

Public Knowledge asks that copy one generation should allow for the transfer of an infinite number of second generation digital copies to a portable device from the first generation digital copy stored on a DVD-R.[61] That is a recipe for running a potential pirate DVD factory. It basically gives up copy protection tools in favor of *ex post* legal remedies. Content providers have made clear that this is not an acceptable copy protection regime, given their experience to date with piracy worldwide.

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[57] *See* DirecTV at 9 (emphasis added).

[58] *See* PC Interests at 8-9.

[59] *Compare* Encoding Rules § 76.1903(4) *with* 5C Content Agreement § 5.2(c).

[60] Encoding Rules § 76.1903(3)(b).

[61] *See* Public Knowledge at 6, n.6

5. The PVR "pause" features protect PVR functionality without undermining "copy never" protection.

TiVo says that a 90 minute limit on copy never does more harm than good, and that if the consumer bought the program, he should be able to copy and time shift it. But like 5C (which contains the same provision),[62] "pausing" the entirety of a full-length motion picture presents far too attractive a hacking target. VOD is generally transactional, and is ordered when ready to watch. The proposed pause exception to copy-never is a reasonable compromise to let customers order "copy never" movies and yet take short breaks.[63] It is not a response (as Public Knowledge says) that pausing a movie for more than 90 minutes does no harm.[64] Cable cannot obtain the product without the rules, and that is quite sufficient harm to avoid.

6. HD Carriage is not sufficient protection in and of itself.

Public Knowledge appears to discount the risks of unauthorized distribution of programming within the digital environment. Public Knowledge's proffered solution is HD; it contends that HD files are so large that it is "effectively impossible" to redistribute them over the Internet.[65] Unfortunately, such an approach is untenable. NCTA strongly supports HD, but there is much content on cable networks that is not HD, so HD alone cannot be an adequate response. As the FCC has previously held, copy protection is a legitimate part of digital cable compatibility arrangements, and this set of encoding rules is essential to their success.[66]

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[62] 5C Content Agreement § 5.1(e).

[63] In this regard, the DirecTV suggestion (at 7) that, "at a minimum," selectable output control be permitted for outputs solely for use with recording devices (*e.g.*, USB 2.0 and 1394), cannot be implemented without defeating the pause function.

[64] *See* Public Knowledge at 5-6.

[65] *See Id.* at 10.

[66] *See Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, Further Notice of Proposed Rulemaking and Declaratory Ruling, 15 FCC Rcd. 18199, 18209-12 (2000).

F. Copy Control and Encoding Rules are Designed to Increase the Programming Available to Customers

It is important to keep in mind what these rules are intended to do. Some of the critics view the rules only as restrictions on potential consumer use of digital programming flowing into the home. In fact, the rules are intended to provide sufficient assurances to program suppliers to induce them to allow the programming into the home in the first place. The rules enable digital content to flow. Without them, the MVPD consumer will not have the programming to view, let alone copy.

III. CERTIFICATION

A. The Background and Need for Certification

Certification regimes arise across technologies and are used to protect the quality of the consumer experience and make certain that the devices work according to expectation. If a customer buys a set-top box or an integrated digital television set as "digital cable ready," or under similar label, plugs it into cable and cannot receive the digital cable services being provided by the cable system, reactions will understandably be severe and primarily directed at the cable operator. The cable operator receives and handles (at considerable cost) a large number of customer calls. The story that the cable system is not "working" with the new television may spread far and wide. Similar complaints may well go to the manufacturer and the retailer, and the reputation of the *class of devices* themselves is impaired.

Warren Publishing's trade publication *Consumer Electronics* put it well in an article titled "Marketing Blunders Abound in CE History." After reviewing the "Edsels" of the CE industry – from the missing "Type III" tape switch on cassette desks, to Divx and Digital Compact Cassette, the publisher concluded that industry standards and product compatibility are essential, particularly "where content is dependent on other industries":

> Lack of industry standards or product compatibility has proven the surest prescription for greatest number of CE marketing debacles. They include the "quadraphonic" stereo of the 1970s (industry-record 4 incompatible formats marketed simultaneously); various CD-based interactive "infotainment" or "edutainment" platforms (Commodore CDTV, Philips CDi, Tandy-Zenith Video Information System); AM Stereo. Format incompatibility can be tolerated in some CE product categories (e.g., camcorders, videogames) but seldom where content is dependent on other industries, such as broadcasters or record labels in cases of "quad" and AM stereo.[67]

The cable industry, through CableLabs, established a testing and certification program to verify that devices meet certain minimum requirements. Comparable regimes abound. Underwriters Laboratories, Inc. ("UL") has been testing devices since 1894.[68] Dolby Laboratories licenses decoder implementations on condition that the devices meet certification standards.[69] THX Ltd. licenses digital cinema equipment and movie theatres under specification and inspection programs.[70] From approximately 1984 to 1997, vendors of electronics for RBOC central offices required testing and certification under BellCore's Network Equipment Building Systems ("NEBS") program before the equipment could be installed in a central office.[71] BellCore would also specify performance measurement criteria for telecommunications technology standards that it developed, *e.g.*, the specific data rates and formats for SONET

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67 "Marketing Blunders Abounded in CE History," *Consumer Electronics*, Jan. 17, 2000.

68 *See* About UL, http://www.ul.com/about.

69 *See* Introduction to Licensing Decoder Implementations Version 2.0, *available at* http://www.dolby.com (setting forth steps required of licensees before obtaining certification).

70 *See, e.g.*, Lucasfilm THX Announces First Generation Digital Cinema Product Certification Program, (May 1, 2002), *available at* http://www.thx.com/press/2002/digital_cinema_cert.html (describing certification program's focus on performance requirements of THX digital cinema equipment, including compression, encryption, transmission, and reliability and operational issues); THX Theatre Program Services, *available at* http://www.thx.com/theatres/sound_services (detailing process for new construction or retrofitting existing theatres, including design services, approval of equipment and certification testing to ensure a theatre's compliance with THX standards).

71 *See, e.g., Deployment of Wireline Service Offering Advanced Telecommunications Capability*, First Report and Order, 14 FCC Rcd. 4761, 4781 (1999) (noting that "NEBS safety requirements, originally developed by the Bell Operating Companies' own research arm, are generally used by incumbent LECs for their own central office equipment…").

transmissions.[72] Verizon Wireless maintains a Phone Quality Assurance Lab through which all wireless phones (branded as "Verizon Wireless") must pass.[73] Carriers who want to use the mark "Cisco Powered Network" to market their networks must use prescribed components and meet defined quality standards.[74]

The DBS industry subjects consumer electronics manufacturers to rigorous acceptance testing for set-top boxes used with DBS.[75] Microsoft provides a certification process for applications that run on Windows Server 2003 or Windows 2000 Server.[76] Intel Corp. and Nokia are among the bigger names that have joined WiMAX, a non-profit company whose goal is to promote and certify broadband wireless access equipment based on the IEEE 802.11 standard. Indeed, WiMAX said that it will develop conformance test plans, select certification labs and host interoperability events over the next 12 months – exactly as CableLabs does.[77]

B. Streamlined Certification Accommodates Manufacturers' Needs

The proposed regulations adopt a streamlined self-certification approach for unidirectional devices. What is proposed is a self-certification process with only a limited, one-time certification of a prototype.[78] PC interests seem to misinterpret the breadth and flexibility

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[72] *See* GR 253 CORE: SONET Transport Systems: Common Generic Criteria, available at http://www.telcordia.com.

[73] *See* http://news.verizonwireless.com/igallery/.

[74] Cisco Systems' eligibility requirement for participation in its "Cisco Powered Network" program can be found at http://www.cisco.com/warp/public/779/servpro/cpn/join/criteria.html.

[75] EchoStar sells "Dish Network" labeled receivers supplied by OEMs, while DirecTV refers its customers to receivers manufactured by virtually all of the major CE manufacturers (by model number) based upon the programming and services they desire. *See*, www.dishnetwork.com/content/technology/receivers/index.shtml, and www.directv.com/DTVAPP/imagine/Imagine_Standard_Receiver.jsp.

[76] *See* http://www.microsoft.com/windowsserver2003/partners/isus/cfw.mspx.

[77] Group Expanded to Promote New Wireless Broadband Technology Standard, <http://wimaxforum.org/index.asp> 04.08.2003

[78] Recommended Regulations to Ensure Compatibility Between Digital Cable Systems and Unidirectional Digital Cable Products and to Provide for Appropriate Labeling of Such Products, which are attached hereto as Appendix I ("Technical Regulations"), § (d) at lines 158-235.

of the process as applied to PCs that handle unidirectional content, saying that certification should only apply to PC components that actually handle protected content, not to all possible configurations and aggregations.[79] The proposed technical regulations do indeed provide for such expedition.[80]

Under the proposed rules, a manufacturer's first prototype product for a unidirectional DTV set will be submitted for interoperability testing to CableLabs (or an appropriately approved third-party laboratory).[81] The manufacturer must self-certify to passing an agreed-upon test suite (to be developed by cable and CE representatives) and submit the results to CableLabs.[82] Certain "critical" tests and tests for harm to the cable network must be rerun and resubmitted until passed.[83] Other failed tests may be corrected and self-certified by the manufacturer without retesting. Later products are subject only to self-certification.[84] If a manufacturer's first product is not a TV, it must submit proof of no harm to the network.[85]

IV. DFAST AGREEMENT

A. How IP Conditions Work

It is common in licensing agreements to condition the use of intellectual property on compliance with certain conditions. For example, under the "5C" agreement, a consumer electronics manufacturer may not use the patented DTCP encryption technology to secure the

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79 *See* PC Interests at 7.

80 Technical Regulations § (d) at lines 158-235.

81 Technical Regulations § (d)(2) at lines 202-211.

82 *Id*.

83 *Id*.

84 Technical Regulations § (d)(3) at lines 213-215.

85 Technical Regulations§ (d)(4) at lines 217-230. Under the more comprehensive OpenCable certification and testing, in order to accommodate the many product "tweaks" and changes that manufacturers make in television features over the course of a product's life, CableLabs allows for paper submissions for minor changes, automatic certification where only the logo or nameplate has changed, and a means for obtaining approval for

output of a digital 1394 port unless it adopts an agreement to respect copy protected signals.[86] As another example, manufacturers may not use the trademarks noted above (*e.g.*, "Cisco Powered Network") unless they meet prescribed certification procedures.

Similarly, PHILA conditions use of the DFAST patent to secure the POD Host interface on compliance with a set of compliance and robustness rules and certification.[87] The DFAST license agreement reflected in the MOU does not itself include those critical elements. Instead they are part of the proposed FCC rules: the copy protection proviso that prohibits selectable output controls is in the proposed FCC encoding rules;[88] certification and testing for interoperability – and therefore for national portability – is located in the proposed FCC technical regulations.[89] Thus the DFAST license terms together with the proposed FCC encoding rules and technical regulations form a single cohesive approach to network and signal security – each is dependent on the other.

B. The DFAST Agreement Will be Available When the Rest of the Regulatory Regime Is Put in Place

Intel asks that the DFAST license agreement be made available now, without adoption of any of the FCC rules that make the provisions of the entire MSO-CE Agreement work as a whole.[90] The reason that is not permitted under the MOU[91] is that the DFAST license agreement would allow the manufacture of untested, uncertified devices with none of the assurances of

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reference designs from which different manufacturers can build various models. *See* Cert Wave Guidelines §§ 4.1.3, 4.1.4, 4.1.6.

86 Digital Transmission Protection License Agreement (July, 2001), which is available at http://www.dtcp.com/data/DTCP_Adopters_Agreement010730.PDF ("5C Adopter Agreement") § 5.2.

87 PHILA § 2.2.

88 Encoding Rules § 76.1903(1).

89 Technical Regulations § (d) at lines 157-235.

90 *See* Intel at 5-6.

91 MOU § 1.3.

critical testing that certification requires – while simultaneously stripping copy control tools (*e.g.*, selectable output control and down-resing of certain HD content) from cable operators although they are available to DBS providers. Such devices might or might not be interoperable or portable. They almost certainly would not respect the commands for selectable output control or down-resing of HD copy never programming that are only being forfeited if there are rules for competitive parity. But, prior to FCC adoption, there would be no FCC set of competitively neutral rules by which all MVPDs would forgo those tools.

Intel is aware of this. It has previously and repeatedly requested that CableLabs sever the DFAST license agreement from the set of FCC rules that make it acceptable to the cable industry. CableLabs has repeatedly said no – because the DFAST license agreement only works as part of the entire MSO-CE Agreement to produce interoperable, portable, competitive devices. To sever the DFAST agreement from the rest of the MSO-CE Agreement's provisions would topple the entire balance that makes that proposal work. The FCC should likewise reject any suggestion that would upend the MSO-CE Agreement.

On a more practical note, Intel does not even need the DFAST license to begin development work. The DFAST technology is also available under PHILA on a broad developmental basis. PHILA has been specifically structured to allow a manufacturer to use the license for *development*,[92] then to terminate it for convenience on notice and without liability, and perform commercial *deployment* under the DFAST agreement at a later date. This path is available to Intel, or any other company, for any compliant product it wishes to build. And, in fact, several consumer electronics manufacturers have availed themselves of this opportunity.[93]

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[92] PHILA § 2.1.

[93] There are now over a dozen PHILA signatories, including manufacturers of digital televisions and set-top boxes (*e.g.*, Pioneer Consumer Electronics) as well as other companies in the digital video industry (*e.g.*, Broadcom

C. Technical Edits to the DFAST Agreement Should be Directed to Private Negotiation

Some parties offer technical edits to the DFAST agreement. The license terms for the DFAST patent have not been submitted for adoption in FCC rule. In both the PHILA and DFAST agreement context, CableLabs has received a number of constructive suggestions. In the PHILA context, it has periodically amended, restated, and posted PHILA to the CableLabs web site to reflect these changes.[94] MPAA has properly directed its recent comments and suggestions on the DFAST agreement to that private negotiation arena, where they are being carefully considered. Moreover, all amendments to the DFAST license agreements will be made available to all other DFAST parties on a most favored nation basis.

Corporation). *See* CableLabs Press Release, "Pioneer Consumer Electronics Signs CableLabs PHILA," March 31, 2003.

[94] PHILA is continuously re-crafted to meet the concerns of manufacturers. Since its original filing with the FCC, the license was clarified to make certain that manufacturers may continue to build proprietary, non-OCAP, non-OpenCable navigation devices after signing PHILA. The license was expanded to explicitly grant rights to the know-how in components and prototypes. No royalties associated with after-acquired intellectual property may be flowed through the manufacturers. The "non-assert" was re-crafted to dovetail with the non-assert in 5C, and make absolutely clear that CableLabs was not reaching into the patent portfolio of the CE manufacturer. Termination provisions were refined so that even in the event of a defective product line, license rights would persist for compliant models. The trademark grant was improved. All aspects of the reciprocal obligation to protect one another's confidential information were revised to match the actual protection mechanisms in use by CE manufacturers. The confidentiality obligations were also reshaped to provide clear ending points in time, in order to accommodate the practical needs of those who manage large patent portfolios. The specific needs of the factories used by TV manufacturers were accommodated. The provisions governing licensing, disclosure of secrets, and handling of confidential know how were modified to accommodate use of offshore component manufacturers, and the confidentiality of those arrangements were protected by using third-party auditors to police the distribution contracts. Manufacturers are permitted (at their own risk) to run factory assembly lines in advance of certification in order to take advantage of factory down time. All liability provisions were scaled back to meet CE manufacturers' concerns. Third party claims against manufacturers are routed through CableLabs in order to craft the most reasonable cure (some of which might be effectuated at the headend, rather than in host devices). The reps and warranties were clarified so that successful hacks, despite appropriate levels of robustness, would not create liability. Those who signed the license in order to test prototypes, but who had not yet gone to market with retail devices, were excused from the joint defense pool. The process of changing specifications was reshaped to clarify distinct participation by manufacturers, and a guaranty that products, once certified, did not need to be re-certified or changed even if the specifications were later updated. This allows products to run through their normal economic cycle. CableLabs has a solid history of working in consensus organizations and responding to legitimate needs. Its record on PHILA is no exception.

D. DFAST Agreement Remedies Are Supplemental to Other Available Legal Remedies, and Need Not Be Changed

Music interests ask that the DFAST agreement be augmented with stronger remedies against consumer electronics manufacturers for non-compliant products, and new classes of third-party beneficiaries.[95] The DFAST agreement carries a carefully negotiated set of remedies that, while containing some provisions for damages in certain cases of breach, are more focused on correcting problems going forward.[96] That balance was deemed appropriate at this time to encourage entry by consumer electronics manufacturers into this arena. The fact that damages or third-party beneficiaries may be defined in the DFAST agreement,[97] however, does not affect any right that aggrieved parties would have for non-compliant devices. If a device illegally strips out technological measures against piracy, for example, DMCA provides full remedies. If a device also violates copyright, the Copyright Act provides its own set of remedies.

E. The DFAST License Already Provides for Non-Discrimination

Some commenters ask for an explicit assurance of non-discrimination in administration of the DFAST agreement. In fact, the DFAST License already provides for non-discrimination in a most favored nations clause: "CableLabs shall make available to Licensee any license terms made available to any or all manufacturers of Unidirectional Digital Cable Products pursuant to the DFAST Technology License Agreement for Unidirectional Digital Cable Products. CableLabs also commits that the benefit of any modifications, clarifications or interpretations of language, made by CableLabs or mandated by applicable governmental or judicial authority, in a DFAST Technology License Agreement for Unidirectional Digital Cable Products shall be

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95 *See* Music Publishers at 16 and 17.

96 DFAST agreement §§ 8.2, 8.3, 8.5, 10.2, and 11.

97 DFAST agreement § 11.

extended to Licensee in accordance with this Section."[98] The MOU already provides that "[t]he DFAST License Agreement does not restrict application of the POD Host Interface and technology to any product that meets its requirements."[99]

PC interests also ask CableLabs never to "significantly disadvantage one technology over another."[100] The entire approach of the MSO-CE Agreement favors secure technologies over insecure technologies, so that warranty cannot be offered. Moreover, PC interests already enjoy a significant "head start" of their own: the proposal subjects cable systems to encoding rule constraints from which the Internet is specifically exempt (unless Congress acts).[101] By contrast,

PCs may freely download video from the Internet without following the rules applicable to video delivered as part of a cable operator's traditional offering. If there is "discrimination," it is in favor of the PC interests.

V. COMPLIANCE & ROBUSTNESS

A. The Agreement Does Not Preclude a POD-Equipped PC with Cable Modem

Intel and the PC interests misinterpret the proposal's "one-way" limits as shutting out PCs. While it is true that the MOU and DFAST agreements are limited to "unidirectional devices" that do not utilize the return path of the system,[102] this limitation was designed to accommodate devices that did not require resolution of the bi-directional issues now being addressed by the MSO and CE negotiators.

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[98] DFAST agreement § 12.13.

[99] MOU § 2.7.

[100] *See* PC Interests at 6.

[101] Encoding Rules § 76.1901(b).

[102] *See* PC Interests at 4.

These terms do not, however, prevent manufacturers from installing a DOCSIS cable modem for high-speed Internet access, *i.e.*, customers may subscribe both to cable service and to cable modem service for the "return path." The modem could be utilized as an external device connected via approved outputs, or could be internalized in the housing of a unidirectional device which otherwise meets the compliance and robustness requirements of DFAST. Thus, the proposal does *not* prohibit compliant TVs or other devices with a cable modem in the housing. Nor does the proposal prohibit a PC with a POD slot and Internet connectivity – provided that the PC meets the compliance and robustness rules.

B. The Agreement Does Require PCs to Resist Tampering and Unauthorized Copying

Intel and the other PC interests, like the cable industry, envision a PC with a POD slot to enable the delivery of protected digital cable content.[103] But just as POD-equipped DTV's cannot have insecure digital outputs, or internal interfaces that are readily susceptible to user access and tampering, (*e.g.*, jumpers, user accessible menus, open buses), a PC cannot have insecure interfaces or internal access points. Virtually every PC has a user accessible bus, which by its very nature is insecure. Intel and other PC interests address this issue in two different ways, both flawed.

First, the PC interests argue that internal buses should not be subject to the rule limiting interfaces to approved encrypted links.[104] However, if this is to be the case, it must be demonstrated how an unencrypted bus can be made robust and tamper proof. Intel in fact is in the middle of discussions with CableLabs on this point, but has yet to make this demonstration. In effect, Intel is asking the FCC to abort this necessary engineering discussion, and simply

[103] *Id.* at 4.

[104] *Id*. at 5-6.

bless a POD-equipped PC's right to receive copy protected programming that is open to user tampering. This is best left to the ongoing engineering discussions.

Second, Intel argues that any port "protected" by DTCP should be automatically treated as a secure port.[105] But Intel's own agreement – 5C – says otherwise. Intel is one of the five companies in "5C," and the 5C agreements do not give automatic approval to DTCP mapped to any connector.[106] For example, it provides special rights to content participants (program providers) for "changes to map the [DTCP] Specification onto buses that are intended for use outside of home and personal networks (*e.g.*, Ethernet)" which "shall be deemed to be 'material'" and carry special precautions.[107] It also requires special processes and assurances to verify that changes to DTCP when mapping to USB must "result in the same level of protection and security with respect to the use of DTCP on the IEEE 1394 bus."[108] The implementation of USB on cable plant for video services requires careful attention to compliance and robustness concerns. Without safeguards, a content provider or MVPD does not know what user-accessible bus is on the other side of the connector and the program may flow right out. The security of connectors cannot be assumed. They must be proved.[109]

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[105] *See* Intel at 9.

[106] *See, e.g.*, 5C Adopter Agreement, Exhibit C—Robustness Rules, § 2, 5C Content Agreement § 3.7(a).

[107] 5C Content Agreement § 3.7(b).

[108] 5C Content Agreement § 3.7(a).

[109] Intel suggests that USB/DTCP would automatically be accepted under PHILA. Intel at 11-12. Intel knows better from ongoing negotiations with CableLabs. Whether under a Host Profile accepted in PHILA or under compliance rules under the DFAST agreement, Intel must prove in the security of copy control delivered to a PC via USB/DTCP. CableLabs has invited Intel to discuss how USB/DTCP can be implemented in cable devices so as to properly and efficiently work with the cable plant and services. We understand Intel and CableLabs are arranging for a session to discuss these issues.

In the end, Intel is seeking a special exemption from the requirement accepted by every other manufacturer of OpenCable devices, whether the devices are built under PHILA[110] or the devices are intended to be built under DFAST: that the device be made robust and tamper proof, so that programmers can be confident in the security of the cable network, and cable operators can therefore acquire digital programming for cable customers. A PC exemption to receive POD-decrypted programming without adequate security is not an acceptable means for advancing the digital transition.[111]

C. The Robustness Rules Already Clarify Robustness Requirements

Intel and the PC interests also argue that DFAST should specify the hacking tools against which devices must be robust.[112] DFAST does in fact carefully distinguish between widely available physical tools (*e.g.*, screwdrivers, jumpers, soldering irons) and software tools (*e.g.,* EEPROM readers and writers, debuggers or de-compilers) against which devices must be tamper-proof, and professional hacking tools (*e.g.*, logic analyzers, chip disassembly systems) against which some vulnerability is expected.[113]

Despite its request, the pleading filed by Intel and the PC interests suggests they know this, because it then asks for modification of the related section, under which robustness requirements can evolve with the changes in available tools.[114] It asks that the FCC narrow the circumstances in which "new circumstances" can require new robustness within the 18 month

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[110] Even under PHILA, Intel would not yet be permitted to use USB/DTCP on a PC, because CableLabs has not yet been able to develop the host profile for a robust, secure POD-enabled PC.

[111] Intel also asks that PC graphics subsystems should be permitted to store display buffer. We do not understand the request, because we believe this is already permitted. *See* Intel at 5.

[112] *See* PC Interests at 13.

[113] DFAST agreement Exhibit C, Robustness Rules ("Robustness Rules") § 3(e).

[114] *See* PC Interests at 13.

product development cycle. The current proviso is based on 5C, which Intel owns.[115] The same mechanism has been agreed to by 14 manufacturers of televisions, set-top boxes and other devices who have signed the PHILA. The mechanism has been found acceptable by a different set of 14 consumer electronics companies, representing the majority of HDTV sales in the United States, who have signed the MSO-CE Agreement. Therefore, there is no reason to change the DFAST terms as written.

D. Watermarking Language Merely Prescribes Non-Interference When/If a Consensus Watermark is Created

The PC interests also request a change in the watermarking language. The Agreement essentially anticipates that if there is a consensus watermark, then consumer electronics manufacturers that manufacture compliant devices must take reasonable precautions not to defeat it.[116] Intel and the PC interests ask that there be clarification of the exact process by which the industries will reach "consensus" in watermarking, and that there be clarification of the "commercially reasonable care" in non-interference with watermark.[117] In fact, the language utilized is exactly the language used in the 5C Agreement with which Intel is intimately familiar.[118] Therefore, the language should be acceptable to Intel – and presumably its fellow PC-oriented commenters.

E. Robustness and Compliance Rules Do Not Require Adoption in FCC Rules

NCTA has presented detailed responses to these suggestions to demonstrate that these issues have been thoroughly vetted and reasonably addressed. We reiterate, however, that the

[115] 5C Adopter Agreement § 3.3.

[116] Compliance Rules § 2.5.

[117] *See* PC Interests at 9-12.

[118] *Compare* Compliance Rules § 2.5.1(1) *with* 5C Adopter Agreement, Exhibit C – Compliance Rules § 6.2.1.1.

compliance and robustness rules are part of the commercial DFAST license, which has not been submitted for adoption as an FCC rule.

VI. CONNECTORS

A. The Agreement Does Not Lock in Current Digital Connectors

The MOU starts with the assumption that existing technology for secure digital connectors – DVI/HDCP and 1394/5C – are approved connectors and then provides any licensee two paths to obtain approval of additional connectors – one through CableLabs, and one through studios approval.[119] CableLabs' review is bounded by specific criteria, and denials are appealable to the FCC.[120]

It appears that the few concerns expressed over connectors arise through misunderstanding.

The parties did not *require* all devices to have 1394 ports, as some think[121] and as others advocated.[122] That choice is left to the market, so that customer demand can determine the acceptance of 1394 as a connector. The cable industry, however, has committed to providing 1394 ports on HD set-top boxes in order to serve today's devices that do include them.[123]

Public Knowledge says this arrangement will "lock in" 5C technologies and discourage innovation and competition.[124] They contend that there should only be a requirement for physical interface specifications, without copy protection, to allow a free market in copy protection techniques. But it is difficult to understand how starting with existing secure

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[119] MOU § 3.6.3, Compliance Rules § 2.4.4.

[120] Compliance Rules § 2.4.4.

[121] *See* Public Knowledge at 11, TiVo at 5.

[122] *See* NAB at 5 n.6.

[123] MOU § 3.6.2.1.

[124] *See* Public Knowledge at 11.

connectors and then adding more as they are invented discourages innovation. This is a far more liberal regime than exists in 5C, where studios may veto new connectors.[125] The MSO-CE Agreement invites innovation.

What is more puzzling is Public Knowledge's proposed solution – to specify only the physical form factor. This is equivalent to saying that any device may utilize an insecure digital interface so long as it fits the physical form factor. In other words, when one device connects a 1394/5C output to a 1394 input on a digital recording device, Public Knowledge says that the recording device need not use 5C security. If it does not, Public Knowledge cannot mean that the output is supposed to send marked content over in the clear.

It is a requirement of the 5C license under which any 1394/5C device is built that the content not be delivered if the receiving port is not authenticated, just as a public key would not decrypt encrypted content to a device without the appropriate private key. So the "free market" device with a physical form factor of 1394 but no 5C copy protection gets no feed of marked content. If this is the result intended, then it is already provided for. A manufacturer today could build a recording device with a 1394 port and no security, and it will be able to record all broadcasts and other content not marked with copy protection. Nothing in the agreement prevents it. What the agreement does, however, is provide for a mechanism in which a licensee could invent a new security technology or a new port, have it tested and approved, and therefore establish a new line of manufactured devices that can talk with other interoperable devices.[126]

Public Knowledge next argues that a free market can better respond to "private" licensing regimes than to the MOU.[127] It notes that the public rejected Divx, and new security

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[125] 5C Content Agreement § 3.7.

[126] Compliance Rules § 2.4.4.

[127] *See* Public Knowledge at 6.

had to be developed. But this is still true under the MOU – connectors can be shunned in the market. The Agreement starts with 1394 and DVI. If a consumer electronics manufacturer invents a new secure connector, it can be manufactured, with or without the competing 1394 port, and the public can make its choices. If one connector fades from favor, eventually it may be dropped from manufacturing. Nothing in the Agreement prevents this. Everything encourages it. Including 1394 in the Agreement is not to "lock in" 5C – it is to assure service to a line of devices that use 1394 connectors today.

B. There Are Multiple Paths to Prove the Security of USB Connectors

Intel takes issue that USB is not already on the list of approved secure digital ports.[128] As noted earlier, Intel knows that the security of connectors must be proven. DFAST offers any licensee two paths to prove security – one through CableLabs, and one through studios.[129] Denials may be appealed to the FCC.[130] Neither Intel nor any potential licensee has attempted to prove the security of USB in this fashion. Instead, Intel and the other PC interests raise unwarranted criticisms of the Agreement.

First, they say that the FCC should spell out the "objective criteria" for CableLabs to approve new connectors or security.[131] The Agreement already provides that security will be demonstrated based on (a) the effectiveness of the technology; (b) the license terms governing the secure implementation of the technology; and (c) other objective criteria, all appealable in specific cases to the FCC.[132] The specific formulation of (c) – allowing for "other" criteria but requiring them to be "objective" – was used because the testing of different security methods is

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[128] *See* Intel at 9-10.

[129] Compliance Rules § 2.4.4.

[130] *Id*.

[131] *See* PC Interests at 9.

[132] Compliance Rules § 2.4.4.

objective but does not always fall into predictable paths. The existing formulation provides two paths and FCC review of denial. It should be as sufficient for any manufacturer.

Second, they argue that potential vendors, not just DFAST licensees, should have the right to seek approval of new connectors.[133] In theory, CableLabs could become an open lab for testing all digital connectors and all encryption techniques for all manufacturers. In practice, CableLabs does not have infinite resources, and needs to limit its obligation for testing and approving digital connectors to only those technologies that manufacturers have a genuine interest in producing for the cable industry and for POD-enabled cable compatible devices. The best way of enforcing this priority use of CableLabs' resources is to offer the service only to companies that have signed either PHILA or DFAST. Without this limitation, CableLabs would potentially be obligated to test connectors and content protection technologies that have little or no value to any manufacturer actually building relevant product.

C. There is Ample Right to Participate in the Evaluation of New Connectors

Both MPAA and music interests request rights of participation in the connector selection process.[134] There is already such a path. Under standard CableLabs operating procedures, parties can join on an email distribution list for Engineering Change Orders (ECOs) being proposed for the specifications, including any changes to digital connector specifications.[135] MPAA is already included on that OpenCable distribution list, and therefore has the opportunity to comment on all engineering changes prior to those changes being finalized in new issued versions of the specifications. Music interests can enter into the same standard arrangements as

[133] *See* PC Interests at 10.

[134] *See* MPAA at 13; Music Publishers at 13-14.

[135] *See* "How to Participate" at the CableLabs OpenCable website, http://www.opencable.com/howto/.

have the many major manufacturers and technology companies who contribute to the OpenCable process.

In addition, MPAA member studios have an independent right to approve connectors under DFAST.[136] MPAA's concerns that an insecure connector will nonetheless be approved should be assuaged by the lengths to which the cable industry has already gone to adopt and defend copy protection tools deemed necessary by studios, on whom cable operators depend for program supply. It is unnecessary to adopt a rule when the instinct for commercial self-preservation suffices.

D. The Agreement Provides for Competing Home Domains

TiVo asks that the rules permit the development of secure home domains, so long as content is secured from redistribution outside the home.[137] The fundamental concept behind a trusted (or secure) home domain is to extend a trusted and managed environment (for example, conditional access or another secure access control system) to a variety of networked devices in the home. This could, for example, permit a customer to enjoy programming on multiple networked home devices.

The Agreement has been crafted to permit the development of multiple, competing secure home domains. Within the context of the proposed regulations, the proposed encoding rules specifically provide for devices which remain under the control of "conditional access" (broadly defined to encompass many technologies).[138] However, they provide that customers will enjoy at least the same opportunities to enjoy programming as would arise under the

[136] Compliance Rules § 2.4.4.

[137] *See* TiVo at 7-8.

[138] Encoding Rules § 76.1903(5)(a).

encoding rules.[139] This creates a competitive space for providers like TiVo to make such offerings.

VII. ANALOG HOLE AND DOWN-RESING

The key issue left unresolved by the parties to the MSO-CE agreement is the analog hole, and the issue has been squarely joined in this docket. The proposal makes clear that over-the-air broadcasting should not be subject to a command to "down-res,"[140] but there was disagreement on what to do with non-broadcast programming. Some parties – Public Knowledge[141] and the CE industry[142] – oppose down-resolution, although the CE industry acknowledges that it is a requirement in 5C.[143]

The cable industry, however, must maintain a platform sufficiently secure to persuade program providers to trust it with high-value content. MPAA writes that down-resing is necessary for that purpose.[144] As NCTA explained in our initial comments, we are open to many solutions.

The cable industry's primary interest is that any method used to close the "analog hole" should not put cable operators at a competitive disadvantage and should result in as much high value content being made available to all MVPDs – and thus to their customers – as possible, consistent with the legitimate concerns of content providers. If the FCC determines, as a number of content providers have suggested, that permitting down-resolution of high-value digital content delivered over analog outputs is the only means of assuring that such content will

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[139] *Id*.

[140] Encoding Rules § 76.1903(2)(a).

[141] *See* Public Knowledge at 16.

[142] *See* Comments of Consumer Electronics Industry ("CEI") at 19. *See also,* HRRC at 9-10.

[143] *See* CEI at 19.

[144] *See* MPAA at 10-12.

be made available to MVPDs and thus to consumers, NCTA supports adoption of rules achieving that result.

All should understand, in evaluating the solutions, that despite its name, "down-res'g" of HD content leaves the viewer with a picture that is subjectively better than even standard definition ("SD") digital programming. If the source of the material is a HD source, then that material will likely have a higher subjective quality when it is down-res'd to SD than material whose original source was SD. Similarly, DVD quality is only as good as the source material. A digitally recorded program will look better on a DVD than an old black-and-white film re-recorded on a DVD. In addition, it is standard practice in a HD receiver to use processing engines and techniques like line doubling to create the viewing appearance of HD, even from a down-res'd picture.

VIII. POINT OF DEPLOYMENT MODULES

The proposed regulations require cable operators to make available PODs coincident with product roll-out.[145] The MOU provides for consumer electronics manufacturers to present rolling forecasts of production of POD-enabled devices to CableLabs for confidential aggregation and release to cable operators who need to place POD purchase orders.[146]

TiVo requests a clarification that its products could include a POD-slot and receive cable services without a cable set-top box.[147] The DFAST license and proposed rules were specifically written to permit unidirectional digital recording devices that meet the compliance and robustness rules to receive cable programming via a POD.

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[145] Technical Regulations § (b)(3) at lines 40-46.

[146] MOU § 2.7.

[147] *See* TiVo at 4-5.

TiVo requests that dual PODs be made available to a customer if required for the particular device that has dual tuning capabilities.[148] There is no restriction on providing PODs in this manner, although it would be prudent for TiVo to identify such requirements in production forecasts going to CableLabs. In addition, CableLabs is currently developing a multi-stream POD with the capabilities for sending more than one program stream through the POD simultaneously. This might be another solution to TiVo's underlying interest, which is presumably to permit viewers to watch one decrypted program while recording another.

TiVo also requests that a POD may not emit any proprietary or unspecified information that is not a standardized MPEG stream.[149] This goes well beyond the scope of the current agreement. TiVo's request is another way of asking for a standardized method of sending data or applications to CPE. Such data and applications issues are included in the NCTA-CEA "two Way" discussions. NCTA anticipates that "standardizing" such outputs will be through the OCAP specification, as indicated in the MOU.[150]

IX. CONSUMER EDUCATION

The MOU provides for customer education through several vehicles: labeling, owners guides, post-sales material, and Go-2-Broadband, CableLabs' locator service.[151] Public Knowledge comments that consumers should be informed of copying limits prior to purchase.[152]

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[148] *See Id.* at 6.

[149] *See Id.* at 7.

[150] *See* MOU §4.3. OCAP permits the downloading and execution of applications to any OCAP-enabled devices by any cable system supporting OCAP, thus supporting the nation-wide portability of applications like program guides or games. The cable industry developed the OCAP specification based upon an existing European specification (MHP) under which Sony, Panasonic, Philips, and other major consumer electronics manufacturers have already built televisions and set-top boxes. More information on the OCAP specification can be found on the CableLabs web site at http://www.opencable.com/ocap.html.

[151] MOU § 3.9.

[152] *See* Public Knowledge at 17-18.

Cable has considerable interest in having well-informed consumers, not only to better compete with DBS and to protect the customer experience, but to reduce the number of customer calls. In this regard, NCTA endorses Comcast's proposal for additional consumer education initiatives by the FCC and the affected industries.[153]

NCTA does not endorse the suggestion by EFF that the FCC permit use of the label "Digital Cable-Basic Ready" for devices without a POD interface. This labeling does not reflect the basic requirement that retail navigation devices must function "to access, multichannel video programming and other services offered over multichannel video programming systems." The FCC has made clear that these are the "services … chosen by the MVPD." *Gemstar International Group, Ltd*., FCC 01-354 25 CR 333, 2001 FCC LEXIS 6598 (2001). Moreover, permitting the use of the proposed label would only lead to greater customer confusion because few consumers can be expected to understand the meaning of a "basic" service.

X. BROADCAST ISSUES

In its comments, NAB asks for a suite of changes relating to DTV tuners, carriage specifications, and Program and System Information Protocol ("PSIP").

First, NAB asks that cable-compatible tuners include 8-VSB off-air tuners.[154] As a practical matter, the parties attempted to harmonize this agreement with the DTV tuner order. The requirement for including DVI-ports on POD-equipped TVs[155] is applied on exactly the same time line and to exactly the same tuner screen sizes covered in the Digital Tuner order, because of the economies of covering both in the same equipment. However, including 8-VSB tuners is not an express requirement of the proposed cable-compatibility rules, which are

[153] *See* Comments of Comcast Corporation at 7-8 and n. 10.

[154] *See* NAB at 5.

[155] Technical Regulations § (c) at lines 116-156.

intended to address reception of signals from cable plant. Tuners that are subject to the All-Channel Receiver Act would carry whatever obligations are imposed on them by the FCC.

Second, NAB asks that the FCC impose the EIA-818 standard on the cable compatible equipment that is subject to the proposed FCC technical rules.[156] In making this request, NAB may assume that cable plants will carry digital broadcast signals in 8-VSB rather than QAM. That is not a requirement of the Agreement and would defeat many of the advantages of QAM that have been discussed in other dockets. Indeed, such an issue is outside the scope of this docket. In any event, as a technical matter, EIA-818 is not necessary in order to achieve what apparently is NAB's goal – inclusion of an off-air, 8-VSB tuner in cable compatible equipment. Consumer electronics manufacturers may include the capability for over-the-air reception in "cable ready" DTV sets in the absence of the EIA-818 standard. Moreover, should a manufacturer wish to include in a cable compatible device the capability to receive 8-VSB signals in the unlikely event that cable operators carry such signals, they are free to do so.

Third, NAB asks the FCC to mandate carriage of PSIP profile 4 and higher.[157] The proposed regulations require out-of-band carriage of Profiles 1-3, which provide information on how to tune and how to navigate.[158] Profiles 4 and higher provide, among other things, AEIT, which can include EPG data. In the February 2000 NCTA-CEA PSIP agreement, the cable industry voluntarily agreed that if the operator chooses to carry PSIP EIT data out-of-band, then it will do so using Profile 4 or higher (assuming event information is made available from the content provider or broadcaster to the AEIT consistent with the February 2000 Agreement). The

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[156] *See* NAB at 8.

[157] *See* NAB at 9-10.

[158] Technical Regulations at 2-3.

2000 PSIP Agreement is already referenced in the proposed rules submitted to the FCC.[159] Thus, NAB is incorrect in its claim that the MOU is attempting to scale back cable operators' commitments to pass through PSIP data under the terms of the 2000 PSIP Agreement.

Fourth, NAB asks that there should be no bandwidth limits on in-band PSIP information.[160] The PSIP Agreement provides some bandwidth "for free," but imposes caps to comport with 64 & 256 QAM. The caps permit transmission of up to 12 hours of data at a prescribed bit rate. Having absolutely no bandwidth limitations on this resource would impose unacceptable operational and economic burdens. This is in fact a "must carry" issue that has been previously resolved in the 2000 PSIP agreement.

Fifth, NAB also asks that the FCC require that two-part channel numbers be the same whether in band or out of band.[161] This proposal is not backward compatible with the 20-30 million legacy digital set-top boxes already deployed by the cable industry. It would not work for cable customers in the real world.[162]

XI. MISCELLANEOUS ISSUES

A. Encryption of the Digital Basic Tier

EFF suggests that the FCC should resolve that all basic tiers, including digital broadcast channels, must remain unencrypted.[163] The Commission currently has a rule addressing this matter which contains a mandatory waiver process.[164] As the Commission has said with respect

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[159] MOU § 3.4.9.

[160] *See* NAB at 10.

[161] *Id.* at 10.

[162] Sinclair adds a sixth request, for tuner performance standards. It admits that matter is under consideration in Docket ET Docket No. 03-65, which is where it belongs. *See* Comments of Sinclair Broadcast Group Inc. ("Sinclair") at 3.

[163] *See* Comments of the Electronic Frontier Foundation ("EFF") at 3-4.

[164] 47 C.F.R. 76.630(a); *KCST v. FCC*, 699 F2d 1185 (D.C. Cir. 1983). *See also* 47 U.S.C. §629(c).

to a similar suggestion regarding scrambling of the digital basic tier: "Tiering and signal carriage issues are more properly considered in our pending digital must carry proceeding."[165] There is no need to address the matter here or to resolve it in the broadcast flag docket as suggested by EFF.

B. Small Cable Operators

ACA anticipates that through waiver procedures, some small systems may seek delayed implementation of the proposed rules.[166] The Commission has been appropriately solicitous of the special circumstances facing small cable operators and it would be expected to be so with regard to the issues raised by ACA.

In response to ACA's request for clarification,[167] the only technical rules applicable to all digital systems are those requiring the provision of PODs. Since all MVPDs (other than DBS) are already subject to a requirement to provide PODs to customers who request them, that requirement adds no additional burden on small cable operators. In any event, waivers of that rule are available. As to the costs to small systems for complying with some or all of the proposed rules, those estimates should be available from vendors. Finally, it should be emphasized that, under the proposed rules, neither large nor small systems would be under a requirement to replace their entire inventory of existing leased set-top boxes on July 1, 2005.[168] The proposed requirement is that only *new* HD set-top boxes acquired *after* that day must include both DVI and 1394 outputs.[169]

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[165] *Compatibility Between Cable Systems and Consumer Electronics Equipment*, Report and Order, 15 FCC Rcd 17568, 17580 (2000)("Compatibility Order").

[166] *See* Comments of American Cable Association ("ACA") at 4.

[167] *Id.* at 8.

[168] *Id.* at 5.

[169] Technical Regulations at 2.

C. Music Publishers

Music interests raise concerns that under this proposal music could be "ripped" from motion picture soundtracks or music videos.[170] This proposal leaves music in no different position than they were without this agreement, where consumers with today's equipment can take an S/PDF digital audio output to a recorder. Music interests are traditionally handled as they grant music rights, for example when providing rights to a studio for a sound track. Whatever protection is appropriate can then be negotiated with the studio, which can in turn negotiate with its distributors.

If a music publisher or other interested party thinks that a soundtrack to a movie should be "copy once" when displayed on cable TV, then they may insist upon that from the studio and the studio has full rights to protect the entire work as "copy once" under this proposal. Music's specific suggestion – such as including SCMS in all digital audio outputs could solve this – is the kind of suggestion that should be routed through conventional engineering channels. CableLabs uses an Engineering Change Request process to subject such suggestions to engineering peer review, through its normal operating procedures detailed on its web site. Other suggestions, such as the precise timing and mechanism for key revocation in the event of a security breach, is a DFAST compliance issue that is not part of the proposed regulations.

D. Closed Captioning

Representatives for the hearing impaired seek a clear statement in the FCC Report & Order adopting these rules that the existing technical rules requiring closed captioning apply here too.[171] NCTA has no objection to such a clarification.

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[170] *See* Music Publishers at 7.

[171] *See* Comments of Telecommunications for the Deaf, Inc. ("TDI") at 4.

XII. JURISDICTION

MPAA argues that the FCC does not have jurisdiction to adopt encoding rules because the proposed rules "necessarily limit[ ] and define[ ] the property rights of copyright owners."[172] MPAA is mistaken in its premise. As an initial matter, the proposed rules impose limitations on an *MVPD's* distribution of programming content, not on the *programmer's* actions. The Commission has taken the same approach in other contexts, such as closed captioning, children's programming, and programming providing emergency information (*i.e.*, the rules are imposed on the MVPD, not directly on the programmer),[173] and can do so here.

Moreover, many rights exist and are regulated independent of copyrights. The FCC was upheld in regulating the degree of "syndicated exclusivity" that could be exercised when cable systems imported television programming (copyrighted or not) into other television markets.[174] Retransmission consent was created as one right independent of rights in the underlying copyright of broadcast works re-transmitted on cable. The DMCA creates another set of rights and limitations for technological measures protecting access to a work that exist independent of underlying copyrights.

Similarly, the encoding rules create another set of limitations on device recognition of tools that exist independent of copyrights in a work. They have no bearing on whether one of the content owner's exclusive rights under section 106 of the Copyright Act has been

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[172] Comments of MPAA at 12-13.

[173] *See* 47 C.F.R. § 79.1 (imposing closed captioning requirements on MVPDs); § 76.225 (requiring cable operators to observe commercial limits on children's television programming); § 79.2 (requiring MVPDs to make programming providing emergency information accessible to persons with disabilities).

[174] *See e.g.*, *United Video, Inc. v. FCC*, 890 F.2d 1173 (D.C. Cir. 1989) (upholding FCC syndicated exclusivity rules and rejecting arguments that the FCC lacked authority to affect copyright liability while noting the "interplay between copyright and communications law").

infringed.[175] Nor are these digital televisions "primarily designed or produced for the purpose of circumventing a technological measure that effectively controls access to a work" as the DMCA would prohibit.[176] To the contrary, the rules are designed to create products that respect such measures.

NCTA is not suggesting that the FCC's jurisdiction to enact the proposed encoding rules can arise simply because it is a good idea. The authority for the FCC to adopt such rules is grounded in several sources of authority. In the broadcast flag docket, MPAA offers 12 pages of justification for the FCC's broad powers "to adopt rules providing for digital redistribution protection,"[177] many of which overlap in this docket.

The proposed rules are an integral component for achieving Section 629's goal of commercial availability of navigation devices. The FCC has already asserted, pursuant to its authority under Section 629, that it is not a violation of the separation requirement of its navigation devices rules to include "some measure of copy protection within a host device."[178] The FCC concluded that copy protection measures are acceptable through licensing as part of a cable operator's grant of conditional access to its services.[179] When reaching this decision, the FCC recognized that copy protection was a sticking point between CE and MSO negotiations and noted its expectation that resolution of the issue would "bring to fruition the goals established by Congress in Section 629."[180]

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[175] *See* 17 U.S.C. § 106. Infringement occurs if a defendant reproduces, adapts, distributes, publicly performs, or publicly displays a copyrighted work in an unprivileged way.

[176] 17 U.S.C. § 1201(a)(2).

[177] Comments of MPAA, MB Docket No. 02-230 (filed Dec. 6, 2002), at 30.

[178] *See* Declaratory Ruling, 15 FCC Rcd. at 18209.

[179] *Id*. at ¶¶ 25-27.

[180] *Id*. at ¶ 32.

The encoding rules define the permissible bounds within which these copy protection tools may operate over MVPD systems. Section 629 is applicable to all MVPDs.[181] The only reason the FCC did not apply the security separation rules for navigation devices to DBS service was because DBS equipment was already available at retail.[182] All other valid regulations under Section 629 are applicable to DBS providers. MPAA itself has noted that competitive disparity would arise if, for example, selectable output control were permitted for DBS but prohibited for cable. MPAA has advised both the House Commerce Committee and the FCC with respect to selectable output control that "cable operators and subscribers would be seriously disadvantaged vis-à-vis other delivery systems that do have this capability."[183] The Commission has already expressed a willingness to regulate in this circumstance: "Should additional evidence indicate that content providers are requiring disparate measures of copy protection from different industry segments, the Commission will take appropriate action."[184]

Section 624A also provides authority in this area. The FCC has already utilized Section 624A to impose labeling rules for Digital Television Receivers to identify to consumers cable programming capabilities.[185] The FCC acted pursuant to Section 624A's mandate that it "specify technical requirements with which a television receiver … must comply in order to be sold as 'cable compatible' or 'cable ready.'"[186] The FCC found that Section 624A's prescription

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[181] *See Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, Report and Order, 13 FCC Rcd. 14775, 14783 (1998).

[182] *Id*. at ¶ 64.

[183] Letter from MPAA to W. Kenneth Ferree dated June 5, 2002 (quoting MPAA letter to House Commerce Committee Chairman Tauzin dated March 20, 2002).

[184] Declaratory Ruling, 15 FCC Rcd. at 18212.

[185] *See* Compatibility Order, 15 FCC Rcd. 17568. It should be noted that while Section 624A was enacted in 1992 without reference to digital cable transmissions, it was amended in 1996 to include reference to digital television.

[186] 47 U.S.C. § 544a(c)(2)(A).

to change regulations "to reflect improvements and changes in cable systems, television receivers … and similar technology" enabled it to regulate beyond simply cable ready/not cable ready labels.[187] Furthermore, because the labeling rules for DTV receivers help to spur the transition to digital television, the FCC appropriately relied upon Section 336(b)(4) and (5) of the Communications Act.[188]

Likewise, 624A grants to the FCC authority to determine "the manner in which [cable systems] encrypt or scramble signals," subject to protecting against theft of service and promoting device functionality. Together with Section 624A's mandate to assure compatibility and promote the commercial availability of converter boxes, and Section 629's requirement to adopt regulations assuring commercial availability of MVPD navigation devices, this clearly contemplates FCC regulations that could affect the "encoding rules" that limit copy control signals.

FCC jurisdiction is not without limits.[189] But in service to these explicit provisions, the very same "ancillary" bases MPAA cites in support of the broadcast flag – Sections 336 and 4(i) – provide additional support for enactment of the proposed rules as well. The MSO-CE Agreement, of which encoding rules are an essential component, was crafted as an integral part of the digital transition. Its endorsement will dramatically hasten the digital transition by

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[187] Labeling Order, 15 FCC Rcd. at 17576 (quoting 47 U.S.C. § 544a(d)).

[188] *See* 47 U.S.C. § 336(b)(4) and (b)(5) (requiring the Commission to "adopt such technical and other requirements as may be necessary or appropriate to assure the quality of the signal used to provide advanced television services" and to "prescribe such other regulations as may be necessary for the protection of the public interest").

[189] *See e.g., United States v. Southwestern Cable Co.*, 392 U.S. 157, 178 (stating the Commission's authority "is restricted to that reasonably ancillary to the effective performance of the Commission's various responsibilities…"); *FCC v. Midwest Video Corp.*, 440 U.S. 689, 708-709 (1971) (holding that the Commission lacked ancillary authority to require cable operators to set aside four channels to be used by certain programmers); *Southwestern Bell Tel. Co.*, 19 F.3d 1475, 1479 (D.C. Cir. 1994); *see also Implementation of Video Description of Video Programming*, MM Docket 99339, Separate Statement of Commissioner Michael K. Powell, Concurring in Part and Dissenting in Part, FCC 00-258 (rel. Aug. 7, 2000) ("It is important to emphasize that section 4(i) is not a stand-alone basis of authority and cannot be read in isolation. It is more akin

speeding the production of new receivers and services for consumers.[190] With the encoding rules, as discussed above, the FCC would be acting under specific statutory grants. Furthermore, the encoding rules do not conflict with copyright laws or any other law. Accordingly, the Commission also has jurisdiction under Sections 336(b) (4) and (5) – in addition to Sections 629 and 624A – to implement these rules that are so vital to the digital transition.

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to a 'necessary and proper' clause. Section 4(i)'s authority must be 'reasonably ancillary' to other express provisions").

[190] *See* Statement of Chairman Powell Regarding Cable – Consumer Electronics Agreement on "Plug and Play", released Dec. 19, 2002 ("Plug and Play cable compatibility is a key piece of the digital puzzle" and "is good for the digital transition."); *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, Report and Order, 13 FCC Rcd. 14775, 14780 (1998) ("The amendments reflected in Section 629 are in keeping with the 1996 Act's general goal of 'accelerating rapidly private sector deployment of advanced telecommunications and information technologies and services to all Americans.'").

CONCLUSION

For the reasons stated above, NCTA urges the Commission to adopt the rules proposed by cable companies and consumer electronics manufacturers in their December 2002 Agreement.

Respectfully submitted,

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APPENDIX 1

Recommended Regulations to Ensure Compatibility Between Digital Cable Systems and Unidirectional Digital Cable Products and to Provide for Appropriate Labeling of Such Products.

Subpart ___ -- Compatibility Between Digital Cable Systems and Unidirectional Digital Cable Products and Labeling.

§ __.___Support For Plug and Play Operation of Unidirectional Digital Cable Products On Digital Cable Systems.

(a) The requirements of this section shall apply to digital cable systems.

(b) No later than July 1, 2004, cable operators shall support Unidirectional Digital Cable Products, through the provisioning of PODs and services, as follows:

(1) Digital cable systems with an activated channel capacity of 750 MHz or greater shall comply with:

(i) SCTE 40 2001, as amended by DVS/535 (as of 10/29/02), provided however that with respect to Table B.11, the Phase Noise requirement shall be -86 dB/Hz, and also provided that the "transit delay for most distant customer" requirement in Table B.3 is not mandatory.

(ii) ANSI/SCTE 65 2002 (as of 10/29/02), provided however that the referenced Source Name Subtable shall be provided for Profiles 1, 2, and 3.

(iii) ANSI/SCTE 54 2002, as amended by DVS/435r4 (as of 10/29/02).

(iv) Without limiting the above requirements, cable operators shall also implement the terms of the Feb. 2000 NCTA/CEA PSIP agreement, attached as Appendix A.

(2) All digital cable systems shall comply with:

(i) ANSI/SCTE 28 2001, as amended by DVS/519r2 (as of 11/5/02).

(ii) ANSI/SCTE 41 2001, as amended by DVS/301r4 (as of 10/29/02).

(3) Cable operators shall ensure, as to all digital cable systems, an adequate supply of PODs that comply with the standards specified in Section (b)(2) to ensure convenient access to such PODs by customers. Without limiting the foregoing, cable operators may provide more advanced PODs (i.e., PODs that are based on successor standards to those specified in Section (b)(2)) to customers

whose Unidirectional Digital Cable Products are compatible with the more advanced PODs.

(4) Cable Operators shall:

(i) Effective December 31, 2003, upon request of a customer, replace any leased high definition set-top box, which does not include a functional IEEE 1394 interface, with one that includes a functional IEEE 1394 interface or upgrade the customer's set-top box by download or other means to ensure that the IEEE 1394 interface is functional.

(ii) Effective July 1, 2005, include both a DVI or HDMI interface and an IEEE 1394 interface on all high definition set-top boxes acquired by a cable operator for distribution to customers.

(iii) Ensure that these cable operator-provided High Definition Set-Top Boxes shall comply with ANSI/SCTE 26 2001 (as of 10/29/02) with transmission of bit-mapped graphics (EIA-799) optional, and shall support the CEA-931-A PASS THROUGH control commands: tune function, mute function, and restore volume function. In addition these boxes shall support the POWER control commands (power on, power off, and status inquiry) defined in A/VC Digital Interface Command Set General Specification Version 4.0 (as referenced in ANSI/SCTE 26 2001).

(5) The Commission will review the standards in this Section on a biennial basis to determine whether any of the regulations adopted herein shall sunset and/or be amended in light of changes in technology or other public interest factors.

§ __.___Unidirectional Digital Cable Products.

(a) The requirements of this section shall apply to Unidirectional Digital Cable Products. Unidirectional Digital Cable Products are one-way devices which include, but are not limited to televisions, set-top-boxes and recording devices, connected to digital cable systems.

(b) A Unidirectional Digital Cable Compatible Television may not be labeled or marketed as "XXX" [XXX="Digital Cable Compatible" or an alternative term to be defined jointly at a later date)] or otherwise marketed as defined below, unless it implements at a minimum the following features. Use of a label to mark the product physically is voluntary. For purposes of this section, "marketed" means using the descriptive terms specified in these rules, or using terminology that describes the device as "cable ready" or "cable compatible," marketing or otherwise indicating the device accepts a POD or that otherwise conveys the impression that the device is compatible with digital cable service.

(1) Tunes NTSC analog channels that are transmitted in-the-clear.

(2) Tunes digital channels that are transmitted in compliance with SCTE 40 2001 as amended by DVS/535 (as of 10/29/02), provided, however, that with respect to Table B.11, the phase noise requirement shall be –86 dB/Hz including both in-the-clear channels and channels that are subject to conditional access.

(3) May navigate channels based on (i) channel information (virtual channel map and source names) provided through the cable system in compliance with ANSI/SCTE 65 2002 (as of 10/29/02) and/or (ii) PSIP-enabled navigation (SCTE 54 2002 as amended by DVS/435r4 (as of 10/29/02).

(4) Includes the POD-Host Interface specified in SCTE 28 2001 as amended by DVS/519r2 (as of 11/5/02) and SCTE 41 2001 as amended by DVS/301r4 (as of 10/29/02) or implementation of a more advanced POD-Host Interface based on successor standards. Support for IP flows is not required.

(5) Responds to Emergency Alerts that are transmitted in compliance with ANSI/SCTE 54 2002, as amended by DVS/435r4 (as of 10/29/02).

(c) In addition to the above requirements, a Unidirectional Digital Cable Compatible Television may not be labeled or marketed either as ["XXX" or "XXX plus YYY"] or otherwise marketed as defined above, unless it employs specified interfaces at a minimum in accordance with the following schedule, provided however that there is no such obligation to incorporate the specified interfaces until there is federal regulation or enactment of a federal law adopting encoding rules and prohibiting selectable output controls.

(1) For 480p grade Unidirectional Digital Cable Compatible Televisions – as follows (either DVI/HDCP or HDMI/HDCP interfaces, or 480p Y,Pb,Pr interfaces):

(i) With screen sizes 36 inches and above – 50% of a manufacturer's models offered for sale effective July 1, 2004; 100% of such models effective July 1, 2005.

(ii) With screen sizes 32 to 35 inches – 50% of a manufacturer's models offered for sale effective July 1, 2005; 100% of such models effective July 1, 2006.

(2) For 720p/1080i (HD) grade Unidirectional Digital Cable Compatible Televisions – as follows (either DVI/HDCP or HDMI/HDCP interfaces):

(i) With screen sizes 36 inches and above – 50% of a manufacturer's models offered for sale effective July 1, 2004; 100% of such models effective July 1, 2005.

(ii) With screen sizes 25 to 35 inches – 50% of a manufacturer's models offered for sale effective July 1, 2005; 100% of such models effective July 1, 2006.

(iii) With screen sizes 13 to 24 inches – 100% of a manufacturer's models offered for sale effective July 1, 2007.

(3) For purposes of this section, screen sizes are to be measured diagonally across the picture viewing area. These screen sizes are stated in the dimensions applied to screen sizes with a traditional 4:3 aspect ratio. When applied to different aspect ratios, the applicable screen size is determined by the vertical measurement. For example, the requirements for a 13" screen size with a 4:3 aspect ratio apply to a DTV receiver with a 7.8" vertical measurement and a 16:9 aspect ratio.

(d) Before a manufacturer's first Unidirectional Digital Cable Compatible Television may be labeled or marketed (as the term "marketed" is defined at subsection ___(b) above) as ["XXX" or "XXX plus YYY,"] a manufacturer shall self-certify according to the following definitions and procedures.

(1) Definitions:

(i) Test Suite is the set of tests jointly developed and mutually agreed by CableLabs and CEA that can be directly attributed to an applicable normative requirement of one or more of the following standards: SCTE 28 2001 as amended by DVS/519r2 (as of 11/5/02), SCTE 41 2001 as amended by DVS/301r4 (as of 10/29/02), or SCTE 40 2001 as amended by DVS/535 (as of 10/29/02) or portions of EIA-818D and DVS/538 (as of 10/29/02) that specifically address items (A) through (G) of the definition of Critical Test.

(ii) Critical Test is a test in the Test Suite that is essential to ensure the device under test (A) can tune and display (TV products) scrambled digital services via the POD conditional access system, (B) will not technically disrupt, impede or impair delivery of services to cable subscribers, (C) will not cause physical harm to the cable network or the POD, (D) will not facilitate theft of service or otherwise interfere with reasonable actions taken by Cable Operators to prevent theft of service, (E) will not jeopardize the security of any services offered over the cable system, (F) will not interfere with or disable the ability of a Cable Operator to communicate with or disable a POD Module or

to disable services being transmitted through a POD Module, or (G) will not impede or impair control of content protection. All other tests are called Non-critical Tests.

(iii) Harm Prevention Test is a test in the Test Suite that shall include appropriate portions of EIA-818D and DVS 538 (as of 10/29/02) that specifically address items (B) through (G) of the definition of Critical Test.

(iv) Self-Certification Documentation is an affirmative statement by the manufacturer that a Unidirectional Digital Cable Television Product model has been tested and has passed the Test Suite.

(v) First Prototype Test Suite Results are the passing results of all Critical Tests in the Test Suite and the results of all tests in the Test Suite for the manufacturer's first model of a Unidirectional Digital Cable Television.

(2) The manufacturer shall bring a prototype of its first model Unidirectional Digital Cable Television Product to CableLabs or an appropriately qualified third-party test facility to execute the Test Suite. Manufacturer shall remedy all Critical Test failures and retest at CableLabs or an appropriately qualified third party test facility. Manufacturer may independently determine how to remedy Non-critical Test failures and may remedy them without retesting of the product at CableLabs or an appropriately qualified third-party test facility. Manufacturer shall submit First Prototype Test Suite Results and Self-Certification Documentation to CableLabs.

(3) For models of a Unidirectional Digital Cable Television Product after the first model, manufacturer shall submit Self-Certification Documentation to CableLabs.

(4) If the manufacturer's first model Unidirectional Digital Cable Product is not a Television, or if the manufacturer's first model Unidirectional Digital Cable Product (whether or not it is a Television) is placed onto the market without being marketed (as the term "marketed" is defined at subsection ___(b) above) or labeled as "XXX" or "XXX plus YYY," the manufacturer shall bring a prototype of said model to CableLabs or an appropriately qualified third-party test facility to execute the Test Suite. Manufacturer shall remedy all Harm Prevention Test failures and retest at CableLabs or an appropriately qualified third party test facility. Manufacturer may independently determine how to remedy all other test failures and may remedy them without retesting of the product at CableLabs or an appropriately qualified third-party test facility.

Manufacturer shall submit Harm Prevention Test Results and Self-Certification Documentation to CableLabs.

(5) After delivering Self-Certification Documentation and First Prototype Test Suite Results for a first prototype Unidirectional Digital Cable Television, manufacturers have no further requirement to test at CableLabs or third-party test facilities.

(e) Manufacturers shall provide in appropriate post-sale material that describes the features and functionality of the product, such as the owner's guide, the following language: "This digital television is capable of receiving analog basic, digital basic and digital premium cable television programming by direct connection to a cable system providing such programming. A security card provided by your cable operator is required to view encrypted digital programming. Certain advanced and interactive digital cable services such as video-on-demand, a cable operator's enhanced program guide and data-enhanced television services may require the use of a set-top box. For more information call your local cable operator."

(f) The Commission will review the standards in this Section on a biennial basis to determine whether any of the regulations adopted herein shall sunset and/or be amended in light of changes in technology or other public interest factors.